

REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

Claims 13 and 15-25 are presented for consideration. Claim 13 is the sole independent claim. Claim 13 has been amended to clarify features of the subject invention. Support for these changes can be found in the original application, as filed. Accordingly, no new matter has been added.

Applicants request favorable reconsideration and withdrawal of the rejections set forth in the above-noted Office Action.

Claims 13, 14, 17 and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,633,887 to Bechthold. Claim 24 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the Bechthold patent as applied above to claim 13. Claims 15, 16, 19 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Bechthold patent as applied above to claim 13, and further in view of U.S. Patent No. 4,779,547 to Zugner.

Claims 23 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Bechthold patent as applied above to claim 13, and further in view of U.S. Patent No. 4,748,916 to Nordh. Claims 21 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the Bechthold patent as applied above to claim 13, and further in view of U.S. Patent No. 3,921,913 to Capy, and even further in view of the Nordh patent. Applicants submit that the cited art, whether taken individually or in combination, does not teach or suggest many features of the present invention, as previously recited in these claims. Therefore, these rejections are respectfully traversed. Nevertheless, Applicants submit that independent claim 13, for example, as presented, amplifies the distinctions between the present invention and the cited art.

Independent claim 13 recites a nozzle arrangement for guiding fluidizing gas to a fluidized bed gasifier or combustor. The nozzle arrangement includes a nozzle piece attached to a nozzle tube or forming a structural unit with a nozzle tube. The nozzle piece includes (i) a nozzle chamber, (ii) a horizontally extending nozzle channel in flow communication with the nozzle chamber, and (iii) a blow opening at the end of the nozzle piece. The blow opening directs fluidizing gas being blown through the nozzle chamber and the nozzle channel into the fluidized bed gasifier or combustor. The nozzle arrangement further includes a solid lid, free of cooling tubes, so as to be impervious to the fluidizing gas, for defining an upper limit of the nozzle chamber, the nozzle channel and the blow opening, and a protecting cover attached above and spaced apart from the lid, for minimizing cooling of the outer surface of the nozzle piece due to the fluidizing gas being blown through the nozzle piece into the fluidized bed gasifier or combustor.

Applicants' invention overcomes drawbacks associated with conventional devices. In conventional devices, fluidizing gas flowing below the lid, that is, the upper surface of the nozzle, tends to cool the lid to a reduced temperature range exacerbated by heavy corrosion. This is undesirable. In marked contrast to such conventional devices, in Applicants' invention, corrosion of the nozzle is minimized by arranging the protecting cover above and spaced apart from the lid of the nozzle. Still further, in order to obtain the desired effect, that is, to prevent cooling of the upper surface of the nozzle (in this case, the protecting cover), in Applicants' invention, fluidizing gas is not allowed to flow from the interior of the nozzle to the gap between the lid and the protecting cover. Thus, in Applicants' invention, a solid lid is provided, which is free of cooling tubes, so as to be impervious to the fluidizing gas, for defining an upper limit of the nozzle chamber, the nozzle channel and the blow opening. In addition, the protecting cover

is attached above and spaced apart from the lid for minimizing cooling of the outer surface of the nozzle piece due to the fluidizing gas being blown through the nozzle piece into the fluidized bed gasifier or combustor.

Applicants submit that the cited art does not teach or suggest such features of Applicants' present invention, as recited in independent claim 13.

The Examiner will note that the plate 22a in the Bechthold patent is not impervious to the fluidizing gas, but, to the contrary, is pierced with multiple cooling tubes 31. The object of the cooling tubes 31 in the Bechthold patent is (in contrast to Applicants' invention) to inject fluidizing gas to the cooling passage 36 between the upper body 22a and the disc 33. Applicants submit, therefore, that the teaching of the Bechthold patent is, in this relevant respect, exactly opposite to that of Applicants' invention, as recited in independent claim 13. Applicants submit, therefore, that the Bechthold patent does not teach or suggest many features of the nozzle arrangement of Applicants' invention, as recited in independent claim 13, such as the arrangement of the nozzle piece, the solid lid, free of cooling tubes, so as to be impervious to the fluidizing gas, and the protecting cover. Accordingly, Applicants submit that the Bechthold patent should not be read to anticipate or render obvious Applicants' invention, as recited in independent claim 13.

Applicants further submit that the remaining art cited does not cure the deficiencies noted above with respect to the Bechthold patent.

The Examiner relies on the Zugner patent for showing a nozzle with a lid 13 and a protecting cover (wear resisting ring 14 and refractory concrete 15), wherein the protecting cover includes a cover plate and ribs. The Examiner relies on the Nordh patent for teaching an air nozzle that can be made from ceramic material. The Examiner relies on the Capy patent for

teaching a gas burner with an inclined part 17 on a ceramic part 11 arranged at a blow opening end of a nozzle channel for forming a rising gas flow at the front of the blow opening.

Applicants submit, however, that none of the remaining art cited teaches or suggests the arrangement of the nozzle piece, the impervious lid and the protecting cover of Applicants' invention, as recited in independent claim 13. Applicants submit, therefore, that the remaining art cited does not cure the deficiencies noted above with respect to the Bechthold patent.

For the reasons noted above, Applicants submit that even if the art were combined in the manner suggested in the Office Action, Applicants' invention, as recited in independent claim 13, would not result.

For the foregoing reasons, Applicants submits that the present invention, as recited in independent claim 13, is patentably defined over the cited art, whether that art is taken individually or in combination.

Dependent claims 15-25 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in independent claim 13. Applicants request further individual consideration of these dependent claims.

For the reasons noted above, Applicants submit that this Amendment After Final Rejection places this application in condition for allowance. This Amendment was not earlier presented because Applicants believed that the prior Amendment placed the application in condition for allowance. Accordingly, entry of the instant Amendment, as an earnest attempt to advance prosecution and reduce the number of issues, is requested under 37 CFR 1.116.

Applicants request favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action, and an early Notice of Allowance.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,



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